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An Investigation of the Integration of Education and Mental Health Treatment into the Care of Diabetes in Syrian Refugee Women

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SIT Graduate Institute - Study Abroad

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Abbreviations:

ADA: American Diabetes Association
JHAS: Jordan Health Aid Society International
LMIC: Low- and Middle- Income Countries
IMC: International Medical Corps
MoH: Ministry of Health
NCD: Non-communicable disease
NGO: Non-governmental organization
PTSD: Post-traumatic stress disorder
UNFPA: United Nations Population Fund
UNHCR: United Nations Higher Commission for Refugees
WHO: World Health Organization

Note: Unless otherwise specified, "diabetes" refers to Type 2 diabetes.

Abstract

Due to the fact that Syrian refugees' situation subjects them to unusual, acute stresses, health professionals must proactively screen them for mental disorders. Many studies show that the correlation between diabetes and mental illness is very strong, thus treatment of diabetic refugees should consider the mental health of the patient in order to ensure successful management of the disease. Additionally, health education should be emphasized as both a route to successful disease management and a route to overall health literacy that can empower the refugee to make important and efficient decisions about accessing health services. This study examined the integration of education and mental health care into the treatment of diabetic, Syrian refugee women by investigating the content, context, purpose, and actors that contribute to diabetes treatment in Jordan. The methods used were interviews, surveys, and a collection of relevant policy and training documents. The various methods of research found: health education is low among refugees, many doctors are forced to remove education from consultations due to time constraints, mental health issues are systemically separated from diabetes treatment, and doctors do not probe for common symptoms of depression during consultations. While the sample sizes were not large enough to be conclusive in some instances, this qualitative study was effective in outlining the general overview of diabetes treatment in Syrian refugee women.

I. Introduction

My home state of Mississippi was the primary influence behind choosing diabetes as my research topic in Jordan. Mississippi has one of the highest rates of diabetes in the country at 12.5% and nearly 70% of the population is overweight or obese. (Diabetes Foundation of MS, 2013) The predictions do not bode well for the state either. In 2014, it was predicted that one-third of all adult Mississippians will be diagnosed with diabetes. (Boseley, 2014) This background, coupled with the extreme financial burden that non-communicable diseases put on these health systems, incited my interest in the topic in Jordan. A large portion of the initial coursework for this program was based on the social determinants of health that have recently been recognized as a key cause of adverse health outcomes. The health education, more specifically health literacy, of diabetic, refugee patients is extremely important in overcoming these social determinants of health that oftentimes determine a patient's health outcome longer before a diagnosis occurs. Similarly, I have noticed in my medical shadowing experiences that an excellent physician can oftentimes only improve the lives of his/her patients from a clinical perspective. In the future, I hope to utilize my research experience in public health to become a better physician who thinks from a population-health perspective when appropriate. Additionally, I chose to focus my study on Syrian refugee women due to the unique barriers they may face when attempting to utilize care and enact lifestyle treatments. Lastly, I chose to examine mental health treatment policy in diabetic, refugee women due to my initial observances of mental healthcare in the country for citizens and non-citizens and the large emphasis on diabetes and depression in

the literature. In the future, I hope to pursue more public health research on both the refugee and the non-communicable disease topics, with my chief goal being an expansion of this qualitative investigation by adding a quantitative impact study of diabetes education.

With an over 10 percent increase in population in the past five years due to the Syrian crisis, all sectors of Jordan's public services—including education, health, infrastructure, sanitation, and water—have been severely burdened. Additionally, 80 percent of Syrian refugees do not reside in a camp setting, which makes access to services difficult to facilitate. The sharp rise in population has resulted in increased supply in the informal labor market, driving many wages down as the prices for basic necessities, such as food and housing, increases. In relation to the healthcare sector, overcrowding in areas with many refugees has led to many issues, such as "shortages of medications – especially those for chronic diseases – and beds, overworked staff and short consultation times." These issues also effect the Jordanian population, which leads to tension in the community. (United Nations, 2014, p. 4-5, 65)

In unfortunate timing, the Middle East region was predicted to undergo a 163 percent increase in the number of people with diabetes between the years of 2000-2030, in addition to similar increases in other non-communicable diseases. (Wild, Roglic, Green, Scree & King, 2004, p. 1049) Below, **Figure 1** illustrates the sharp increase in NCDs from 1990-2010 in the middle-income countries of the Arab World. (Jordan and Syria are considered middle-income countries)

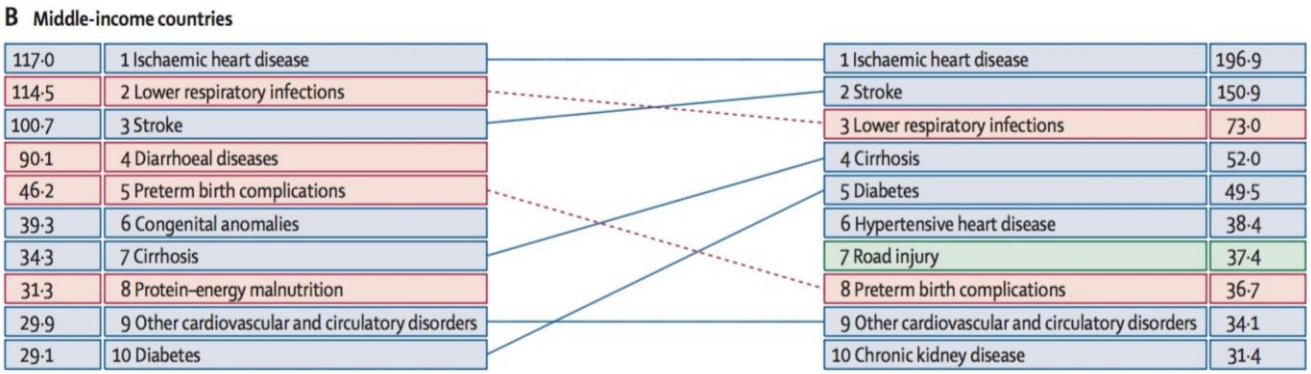

Figure 1: The change from 1990-2010 in the top ten causes of death in middle-income countries in the Arab World (Lines highlighted in blue are NCDs)

Source: Rahim, et al., 2014 p. 2

The financial burden on low- and middle-income countries from non-communicable diseases is extreme. Oftentimes in LMICs, the direct and indirect costs of living with NCDs are absorbed by households directly, instead of being filtered through governments or insurance companies. (Kankeu, Saksena, Xu & Evans, 2013, p. 1-2) NCDs can also become a barrier to economic equity and development by creating sudden financial hardship. For example, NCDs "cost the Indian economy an estimated US$9 billion with an estimated 2 million people experience catastrophic spending as a result of cardiovascular disease and cancer," only. (Demaio et al., 2013, p.2) At the beginning of the refugee crisis, both Syria and Jordan were undergoing epidemiological transitions from communicable diseases to non-communicable diseases that were expected to increase the financial costs on their respective healthcare systems. The crisis has caused a double burden of both communicable and non-communicable diseases on the response team, with typical

refugee crisis outbreaks of tuberculosis, measles, and hepatitis A occurring while the management of chronic diseases must still be considered daily. (UN, 2014, p. 63) As the recently emerged burden of NCDs is not going away anytime soon, Jordan must improve their primary healthcare system to not only improve NCD management, but to also implement preventative care that can reduce NCD incidence.

This research topic is relevant to the theme of this program due to its focus on the policy with regards to the treatment of refugees with diabetes. Additionally, this study attempts to take into account all actors that influence the management of diabetes for Syrian refugees in Jordan. For many parts of the semester, the course has focused itself upon sustainability and long-term effects in the health system when discussing the refugee crisis. Thus, this research project and the theme for the semester go hand-in-hand.

While this study argues for the integration of mental health treatment and improvement of education in the care of diabetic refugee patients, it does not only examine the content of the policies and what these policies recommend health care professionals do in a clinical setting. As recommended by Walt and Gilson in *Reforming the Health Sector in Developing Countries: the Central Role of Policy Analysis*, this study examines diabetic patients' treatment experience from four critical perspectives: content, context, processes, and actors. (1994) This is a smaller study that examines diabetes care in Jordan from a more holistic view in order to improve the clinical treatment of Syrian refugee women by integrating mental health treatment and improved education into their care. As one

interviewee stated, “all diabetes patients are their own doctors.” (Interview C) Thus, the healthcare system must educate each patient about his/her disease in order to improve the chances of proper management. Similarly, the failure to recognize and treat psychosocial conditions can greatly exacerbate diabetes and other comorbidities. (American Diabetes Association, 2015, p. S26)

Refugee women are oftentimes subjected to a dangerous cycle involving poverty, stress, and shifting environments. When coupled with the burden of chronic disease and/or a mental illness such as depression or post-traumatic stress disorder, the cycle can become even more vicious. Mendenhall and Weaver studied Type 2 diabetes and depression in women from LMIC and the inequalities exacerbated by the double burden effect, stating,

> These inequalities create a negative feedback loop, whereby social and economic problems increase the likelihood of developing depression, diabetes, and their overlap, and these illnesses together promote the development of diabetes-related complications such as loss of limbs or eyesight and subsequent physical disability, further compounding socioeconomic inequalities. Finally, because of stigma and limited mental healthcare services in LMICs, women experiencing this comorbidity are more likely to seek care for diabetes than for depression, leaving half of the comorbidity unaddressed. (2014, p. 2)

Increased health literacy through education and mental health evaluations should be championed in order to prevent, detect, and break the cycle mentioned

above. As aforementioned, the refugee crisis will hopefully only be temporary, but diabetes in the Middle East will only increase. It is important that the healthcare professionals in the region are treating diabetic women through education and mental health evaluations in addition to medicine. This study subscribes to the "no health without mental health" mantra, and as it strives to discover the treatment experience of an at-risk population with diabetes, it will hopefully give physicians and policy-making bodies a better understanding of the gaps in the care of refugee women. (Martin et al., 2007)

Because too few current policies are in place for treatment of diabetic refugees, it is difficult to make a prediction as to what the outcome of this study will be; however, it is hypothesized that this study will find that doctors do not ask questions regarding general wellbeing and depressive symptoms. Additionally, education regarding diabetes will be low and largely restricted by the doctor's time limits per patient, and doctors will view mental illness as a separate issue from diabetes.

II. Literature Review and Background

Due to the many different aspects of this study, the literature review will be divided into four categories: Diabetes and Mental Illness, Special Factors Affecting the Care of Women, Refugee Health, and Education as a Means to Health Literacy. As this study is recommending the integration of certain policies in the treatment of diabetes, the literature review must be robust and make a very strong case on these

points. This researcher was unable to find best-treatment practices guidelines or policy recommendation from the Jordanian MoH with regards to diabetes.

Diabetes and Mental Illness

The literature linking diabetes and mental illness is both extensive and strong. Specifically, many of the relevant works concentrate on depression and diabetes. In their seminal work, *No Health without Mental Health*, Martin et al., surveyed many studies for the effect of common mental disorders on diabetes. Their results found "consistent evidence from many studies" that common mental disorder is a comorbidity with diabetes, affects adherence to treatment of diabetes, and affects the final outcome of the treatment. (2007, p. 868) However, few studies have been able to determine a directional cause for this link, and this study will not attempt to determine this. Instead, it will recognize the prevalence of comorbid mental illness and diabetes, especially among women. Additionally, it is recognized that lifestyle choices contribute to diabetes, and these choices may also contribute to the development of mental disorder in the general population. (Gammouh, Al-Smadi, Tawalbeh, Khoury, 2015, p. 3-4)

In a meta-analysis study of comorbid depression in diabetic adults, Anderson, Clouse, Freedland, and Lustman reviewed 42 studies that investigated the prevalence of depression and diabetes. They recognized depression as "depression severe enough to warrant clinical intervention," and they included both controlled and uncontrolled studies. The analysis found that, in controlled studies, the rates of

depression among diabetic groups were double that of non-diabetic groups. Additionally, they found that the "prevalence of comorbid depression was significantly higher in diabetic women (28%) than in diabetic men (18%)." (2001, p. 1069-1072) While this analysis was very thorough, it may be more applicable to disaggregate the data more by Type I diabetes, Type II diabetes, and economic status of the patient. As this study was performed in 2001, it would be useful to perform another meta-analysis citing more recent literature, and the burden of diabetes has extended into more developing countries since that time. Though this large study performed should be considered conclusive evidence of a strong correlation between depression and diabetes, other widely cited studies after the meta-analysis have found similar results. Egede, Zheng, & Simpson found that individuals with diabetes were twice as likely to have diagnosed depression than the general population. (2002, p. 464) In similar fashion, Arroyo et al., utilized a very large sample size and found that depressive symptoms were associated with an increased risk of developing Type II diabetes. Lastly, a study performed in the UAE compared depression in women with and without diabetes. It found a 25% increase in depression among women with diabetes, recommending periodic mental health screening of patients with diabetes, especially after the initial diagnosis, in order to decrease complications and lower economic costs. (Hawamdeh, Almakhzoomy, & Hayajneh, 2015)

The importance of proper care of diabetes and depression cannot be understated. With regards to the general quality of care in diabetics with depression, Katon et al., discovered that only 51% of the diabetic patients with

major depression were diagnosed with major depression in a primary care setting. Of that 51%, only 6.7% received more than 4 psychotherapy sessions in 12 months. This study shows the difficulties in recognizing depression among diabetic patients, and it may also hint at an overall poor recognition/evaluation system. (2004) Three separate controlled trials have found results that encourage the treatment of depression as a means to improve glycemic control. (Anderson et., al 2001, p. 1069) The aforementioned meta-analysis made important conclusions from several studies about the importance of proper care, saying

> These investigators found that major depression was present in 14.7% and elevated depression symptoms in 26% of diabetic patients. Thus, as many as one in every three individuals with diabetes (at least in those participating in clinical studies) has depression at a level that impairs functioning and quality of life, adherence to medical treatment, and glycemic control, and increases the risk of diabetes complications. (Anderson et., al 2001, p. 2074)

In fact, studies have shown that diabetes has some of the most detrimental effects on overall health when coupled with depression, except when compared to patients with multiple chronic diseases and depression. This is illustrated by **Figure 2**, below.

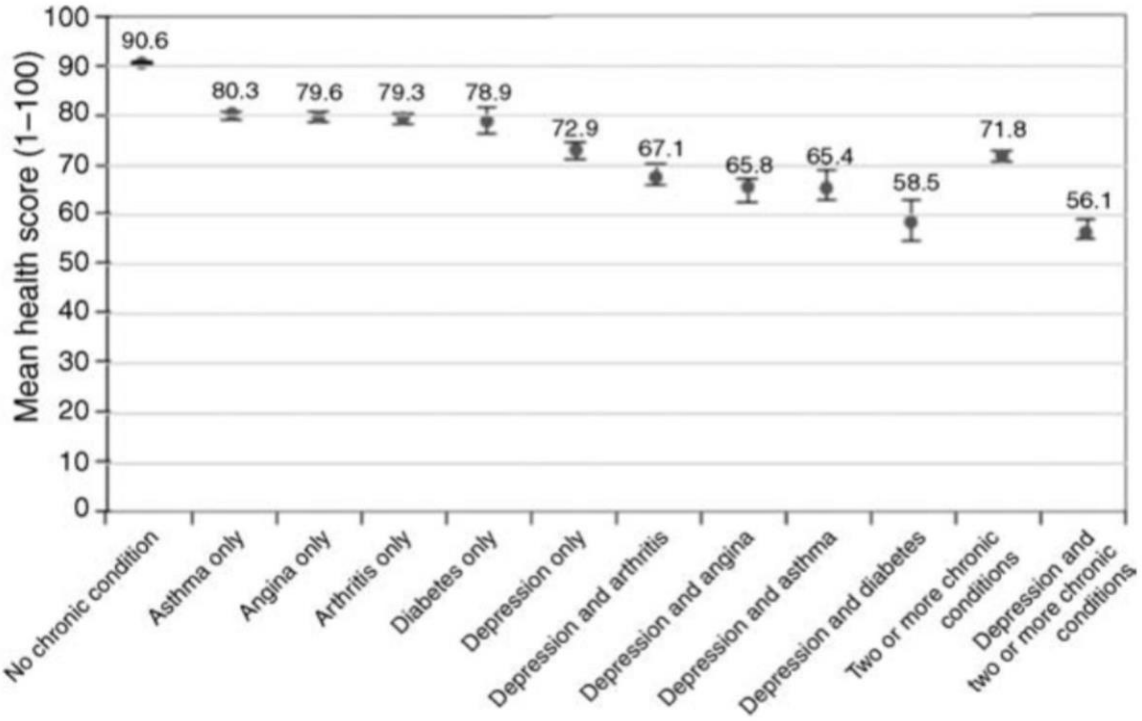

Figure 2: Global mean health by disease status. (Saba Moussavi et al., Depression, chronic diseases and decrements in health: results from the World Health Surveys, The Lancet, 2007, by permission of Elsevier) *Source*: Katon et., al 2011 p. 4

Currently, the American Diabetes Association recognizes the need for psychosocial support in the treatment of all patients with diabetes. It could easily be assumed that a population at higher risk, such as refugees, requires special attention. Similarly, the failure to recognize and treat psychosocial conditions can greatly exacerbate diabetes and other comorbidities. (ADA, 2015, p. S26) It is recognized that this is difficult to accomplish in an emergency situation; however, the conflict is now beginning its fifth year, and proper long-term care requires a commitment to psychosocial support for refugees. This can be done through things like "diabetes self-management education and support," which equips the patient to

improve his or her care with minimum resources. This patient-centered focus has shown a tendency to not only improve HbA1c results, but also improve quality of life and psychosocial issues. (ADA, 2015, p. S21)

Special Factors Affecting the Care of Women

As this study focuses on women, it is important to cite literature that sheds light upon the special factors that must be taken into account when treating refugee women in LMIC and the Middle East.

Hu, in a study entitled *Globalization of Diabetes: the role of diet, lifestyle, and genes,* wrote extensively in regards to the importance of physical activity and diet changes in promoting the prevention and proper management of diabetes. (2011) In the Middle Eastern region, gender roles are strictly defined, and sometimes a woman is subject to the decisions of her husband or a male relative. Additionally, the woman may be expected to stay at home with children. (Moghadam, 2003) This may lead to difficulties in two areas with regards to lifestyle changes necessary both pre- and post- diagnosis of diabetes: diet and exercise. Although the woman is expected to cook for the family, gender roles may stipulate that the man decides what the family eats. Also, refugees may be unable to afford or access healthy foods, such as fruits and vegetables. Diet changes may be difficult to implement for the woman due to these two reasons. Similarly, physical activity is something that many women may find difficult due to the cultural expectation of covering most of the body, gender separation/times at local gyms, and responsibilities with children

at the home. An extensive study done in Saudi Arabia noted the cultural lack of exercise when it found that 75% of women attending a primary health clinic were not exercising adequately or at all. Even when the women were exercising, it oftentimes consisted of increased housework instead of aerobics or brisk walks. (Rasheed, 1998, p. 413)

While there have not been many studies on the barriers to lifestyle changes for Middle Eastern women, it can be assumed that the importance of these lifestyle changes must be stressed. Increased health literacy can equip women to understand the importance of dietary changes when attempting to manage diabetes. By the same token, health education should be utilized to motivate women to exercise, in some form, multiple days a week.

Al-Shagran, Khasawneh, Ahmed, & Jarrah undertook a study that surveyed Syrian Refugees in Jordan for post-traumatic stress disorder. Their results give some insight into mental illness among refugees, such as they received the most "yes" responses to their question: "I have horrible memories and undesirable thoughts of the events I had been through." The study also found that there was a significant difference between males and females with regards to the levels of intensity of PTSD. Females were more impacted by their experiences in Syria than males were. (2015, p. 42-43) It should be noted that the researchers in this study discuss their attempts to portray the plights of refugees, and they do not acknowledge these biases. This researcher is concerned by this fact and suggests that these results not be taken as definitive, but instead as a study underscoring the already-known importance of mental health care for Syrian refugees.

Refugee Health

As aforementioned, the refugee crisis is traumatic on everyone involved. Furthermore, Jordan and its health system are straining under the conditions. They recently began charging non-camp Syrian refugees at the uninsured Jordanian rate. Previously, Syrian refugees received free care at all MoH centers. While the Syrian healthcare system was adequate before the crisis, the system is now in shambles. Kherallah et al, discussed the health status of Syrians before and during the conflict, and they pointed out the problems that the Syrian state could face post-conflict. For example, pre-crisis Syria was undergoing a significant epidemiological transition, with 77% of mortalities being caused by non-communicable diseases, and there have been significant improvements in infant and maternal mortality. By no means was the Syrian health system perfect, but it was established enough to provide consistent tertiary care and basic services to most of the population, even rural. At the time of the study, it was recognized that the health system has been completely disrupted. Since that time, the situation has only gotten worse, with resources such as water and proper sanitation being very difficult to get. (88% of the primary healthcare centers rely on the national water system) Additionally, essential medicines are extremely difficult to access. The article also points out that post-conflict, there will likely be a large increase in communicable diseases and epidemics of water and food-borne illness due to the breakdown of the national infrastructure. At the same time, the chronic illnesses have not gone away. In fact, the extreme stress and gap in health care coverage will likely exacerbate this issue. (2012, p. 51-53) A post-conflict future, while sometimes difficult to see, must be

taken into account when treating Syrian refugees. If they do return to their homeland, their time in Jordan and other host countries should serve to improve their education and expectations for the self-management of the disease as they seek to rebuild their national health care system and country.

The literature also recognizes the stresses that come from being a refugee. Hassan et al., found a significant increase in mental health issues during crises, where many of the issues arose from day-to-day stressor. This finding led to a recommendation of treatment by a physician who is in close contact with the social support in the community. (2001, p. 14-15) Other studies, although undertaken in the United States, are applicable to this study due to their focus on the effects of diabetes and depression. The management of a chronic disease will increase the responsibilities of a refugee, possibly leading to increased mental stress, in addition to the mental stress caused by traumatic events and leaving one's home. Additionally, a study found that individuals with diabetes were twice as likely to utilize ambulatory care more and fill more prescriptions. Moreover, if the diabetic patient was depressed, he/she had total health expenditures 4.5 times higher than diabetic individuals without depression. (Egede et al., 2002, p. 464-466) This fact is especially applicable as NGOs attempt to reduce costs as funding becomes more scarce. The literature strongly suggests that it would be not only be important to take mental health into account with diabetes patients in order to improve treatment outcomes, but it would also be financially responsible long-term.

Doocy et al., in a recent study of NCDs in Syrian refugees in Jordan found that half of the households studied had a member diagnosed with an NCD, with 18.3% of

the households reporting diabetes as being the NCD they have. The two main reasons for not seeking care among the households with diabetes were "could not afford provider costs" (about 50%) and "did not feel sick" (about 25%). (2015, p. 7) While education will not solve the lack of funding, it is very likely that increased health literacy would inform a patient that he/she must receive treatment for diabetes even if they do not feel sick. If they postpone care, complications such as blindness, loss of limbs, and permanent nerve and kidney complications could arise, thus causing a much larger stress on the health system. (ADA 2015, p. S4) It is important that patients understand the consequences of neglecting to care for their diabetes.

Another study on Syrian refugees and NCDs found that "lack of knowledge" was the fourth most mentioned reason by women with regards to barriers to care, while it ranked eighth for men. Among unregistered refugees, lack of knowledge about healthcare services was the highest-ranking barrier to care. This is disappointing and highlights a need for better education of the public about health resources. A more positive finding of the study was the "solid flow of information within Syrian refugee communities in Jordan," which implies that proper education of patients could have an exponential, positive effect on general health literacy in the refugee population. (UNHCR, UNFPA, & IMC, 2014, p. 17-18,20)

Education as a Means to Health Literacy

The previously cited study by the UNHCR, UNFPA and IMC also conducted in-depth interviews of Syrian refugees suffering from NCDs. With regards to education, the study found that 18 of 51 interviewees made statements that "demonstrated a serious lack of knowledge about their condition." (2014, p. 31) This alone is a reason for an increased emphasis on health education. Possibly more alarming, the study found that 36 of 51 interviewees,

> Reported having had no education whatsoever about their condition during their time in Jordan. Only eight individuals had received counseling from their healthcare providers (materials or sensitization session), and the remaining respondents cited family/friends and independent research as their primary sources of information regarding their condition. (UNHCR et al., 2014, p. 31)

It is important to note that this is not only damaging to the patient's own care of the disease, but uncontrolled diabetes can lead to increased health costs for Jordan in later years as more patients could lapse into catastrophic complications.

Nutbeam in *Health Literacy as a Public Health Goal* defines health literacy under three categories: functional, interactive, and critical health literacy. **Figure 3**, below, outlines the content within each category and their relationships.

Health literacy level and education goal	**Content**
Functional Health Literacy: Goal: Communication of information ↓	Transmission of factual information on health risk and health services utilization
Interactive Health Literacy: Goal: Development of personal skills ↓	Above, and opportunities to develop skills in a supportive environment
Critical Health Literacy: Goal: Personal and community empowerment	As above and provision of information on social and economic determinants of health, and opportunities to achieve policy and/or organizational change

Figure 3: Levels of health literacy: goals and content

Source: Definitions from Nutbeam 2000 p. 266

As can be seen above, health education should be implemented with the end goal of personal and community empowerment, not just proper management of the disease, though this is an important aspect. Nutbeam cites historical underestimation of health promotion and education as reasons why it is sometimes not seen as a public health tool, and he points out the success that educating people about the harm of tobacco smoking has had in many parts of the world as being successful implementation of policy. Quite applicably to this study, he points out the key role of health education as a means of making health more equitable by

equipping the patient to mitigate social, economic, and environmental circumstances, which are now commonly referred to as the social determinants of health. (2000, p. 258-260)

The case for improving health literacy through education among refugees is strong. As aforementioned, even the minimum amount of health education can lead to a better understanding of the health system, thus making the patient a more efficient user of this system. There are two main reasons for educating the diabetic refugee patient in the current situation. The first is the fact that diabetes is a permanent condition. The 5-minute investment of a doctor educating a patient about their condition will not be fruitless, and it equips the patient with the information to deal with the condition his/herself. The second relates more closely to the crisis. The healthcare sector cannot expect to reach every diabetic refugee patient through primary care services. As shown by Doocy et al., Syrian refugees will likely communicate the information throughout their communities. (2015, p. 7) More information among the population could likely encourage refugees to make lifestyle changes together and/or access the system at a primary level before catastrophic complications from the disease.

III. Methodology

As mentioned previously, the methodology of this study focuses on the content, context, processes and actors of the treatment process for diabetic Syrian refugee women in Jordan. Thus, the context of the refugee situation in Jordan was

taken into account. This research did not assume perfect conditions, as the results would not be applicable. The processes were examined through the literature review and the few policies that were made available during the research period. The actors, MoH, NGOs, patients, and healthcare practitioners, were interviewed in order to find specific, detailed information on diabetes treatment.

The patient surveys were distributed to non-camp refugee women with diabetes. The study focused on non-camp women due to access issues as well as the large gap in coverage of medical care between camps and host communities. The primary access point was through Caritas clinics. Caritas is a religious NGO that provides free medical services to anyone who needs them in various locations throughout Jordan. It is noted that various clinics and locations would have been ideal, but due to time constraints and access issues, this was limited. The study did not interview patients to attempt to make broad conclusions on clinical treatment, but instead it focused on understanding the situations of female, diabetic refugees and their interactions with the health systems. The questionnaire collected general information on the environment the patient lived in, the access she had to necessary items, the education she receives about her chronic illness from both her doctor and her pharmacist, and whether or not she had been referred to psychosocial support. As mental illness is severely stigmatized, specific questions on the issue could not be asked without possibly making the patient uncomfortable. Nevertheless, incidence of mental illness among refugees and diabetic patients has been outlined in the literature review, and this study does not attempt to further these investigations.

The patients are considered a vulnerable population due to their status as refugees. It was necessary to be extremely sensitive to the patient's situation. The patient may have been traumatized by past events, possibly impoverished, and a long way from home and a familiar environment. This care consisted of carefully formed and vetted questions, in addition to proper informed consent (informing the patient of confidentiality, privacy, and the right to withdraw).

Due to patient access issues, language barriers, and time constraints, the number of patients surveyed was slightly less than hoped. It was extremely difficult finding a large number of patients that fit the criteria as there is not a clinic devoted to NCDs in Amman, and it could not be predicted when a criteria-fitting patient would visit the clinic. Additionally, it was not taken into account that many (in this case, all) of the Syrian refugee women were illiterate. Thereby, the surveys had to be read to each woman by a healthcare professional fluent in Arabic. This was extremely time consuming, and it prevented the mass distribution of surveys. Also, the presence of a health professional may have altered responses in the doctor/patient category. Therefore, questions involving direct satisfaction with care were thrown out. While it was disappointing to not distribute a large number of surveys, the difficulty accessing these patients emphasized the importance of hearing what they had to say.

During the research process, an opportunity for an interview with a Syrian refugee family suffering from several cases of Type I diabetes arose. Proper consent was given to the interviewees (father and daughter older than 18), and the survey was used as a guide by a translator experienced in working with refugees. This is

not seen as an issue, as the original proposal that the LRB approved allowed for interviews of diabetic, Syrian refugees, but due to the time constraint, surveys ended up being the main form of data collection among Syrian refugees.

Interviews with other actors, such as NGO officials, MoH officials, and healthcare practitioners, were more open-ended due to these individuals not being considered part of a vulnerable population. The interviewees in this category were selected based on accessibility and the sector of the health system they are involved in. Many of the officials are very senior in their respective organizations. All of the interviewees were open and informative when providing information about diabetes treatment, the refugee crisis and healthcare access in Jordan. One official also provided treatment and training protocols for diabetes that will be implemented soon. While the questions varied slightly depending on the position he/she held, they were always based on four main points: the treatment recommendations used, the education given to diabetes patients, special considerations when caring for Syrian refugees, and mental health treatment.

Overall, the research experience was extremely informative with regards to both diabetes treatment in Jordan and accessing the patient population. All information needed to create an accurate picture of diabetes care for refugees in Jordan was collected.

IV. Results and Discussion of Findings

In order to best organize and discuss the results, this section is broken down into the three types of data collection: interviews, questionnaires, and material culture. The hypothesis is again included here as it is cited throughout this section: It is hypothesized that this study will find that doctors do not ask questions regarding general wellbeing and depressive symptoms. (Treatment hypothesis) Additionally, education regarding diabetes will be low and largely restricted by the doctor's time limits per patient. (Education hypothesis) Finally, doctors will view mental illness as a separate issue from diabetes. (Mental illness hypothesis)

Interviews

During the research process, the interviews revealed a wealth of information on the treatment of diabetes in Syrian refugee women. The policy-maker interviews consisted of a senior official at the MoH (Interview B) and a senior official at UNHCR (Interview E). Interview B detailed the overall health policy for Jordan. While the MoH is currently working on specific treatment protocols for diabetes and other illnesses, they released a broad national health strategy in 2010, but the goals for this strategy have been postponed due to the Syrian refugee crisis. The interviewee thought that the diabetes protocols would include mental health screenings, but he was not sure. He acknowledged that screenings were necessary if there was severe

mismanagement, especially among refugees. Currently, MoH is piloting a computer-based, NCD surveillance system. This will allow for more accurate epidemiological data to be collected, as well as the communication of reminders to educate patients about their disease, as many doctors are "overloaded and short on time." (Interview B) Although computer systems will allow for better communication of protocols, it is only useful if these protocols remind doctors the importance of taking the time to educate the patients about their condition. Some statements contradicted other interviews. For instance, Interview B viewed a recent price increase in healthcare costs for Syrian refugees as a very minor inconvenience, but Interview E stated that there was data showing a 50% decreased utilization of health services after the price increase. Similarly, all MoH officials (including health workers) interviewed stated that Syrians and Jordanians were treated equally, while studies suggest that this is not the case. (Interview A, B, C) (UNHCR et al., 2014) Overall, the MoH demonstrated that they were interested in proactively reducing NCD incidence among all residents of Jordan, but there was disconnect between Interview B and other results from this study. Statements made by a senior MoH official support the education hypothesis by stating that doctors fail to educate patients because they do not have the time in a clinical setting, and his view that diabetes and mental illness should be treated together disproves the mental health hypothesis, as it was not expected for officials to see the two as comorbidities.

Interview E provided an overview of the health crisis, information on the NCD burden among refugees, and the plans for improving NCD prevention and treatment. The senior UNHCR official stated that many of the crisis indicators—

infant mortality, acute malnutrition, and communicable disease outbreaks—were largely stable in the country; however, these indicators still require active monitoring for abrupt changes in refugee population's health. The current breakdown in health services in Syria and lack of immunization pre-crisis requires constant prevention activities, such as screenings and immunizations. She also noted a general prevalence of psychological distress among the refugees. With regards to the Jordanian health system, she acknowledged that there was "a relatively high standard of care" before the crisis. (Interview E)

On the subject of diabetes specifically, the official discussed her discontent with the fact that there are many problems with extreme mismanagement, such as loss of eyesight or limbs. The causes of this were cited as lack of financial means to access services, poor education on the disease, and difficulty with accessing medicines/doctors prescribing medicines that are too expensive and/or hard to stock. The solutions to these problems that the organization is focusing on are primarily: utilization of health workers to increase education and training doctors to treat NCDs more effectively.

Health education is already a priority at JHAS clinics, where a health educator is on staff. UNHCR hopes to increase the numbers of health educators in order to increase compliance with medicine usage and healthy lifestyle recommendations. Similarly, the organization is working to increase community health workers while also ensuring a high standard of care. The workers will have "limited health education" and will primarily check vital signs, connect patients with health resources, and encourage healthy lifestyles. UNHCR will soon begin training

sessions for physicians in Jordan that will attempt to improve NCD treatment and encourage physicians to prescribe cheap, available medicines for chronic disease management. Additionally, they have created standard treatment protocols for common NCDs. The interviewee provided copies of both the training materials and the treatment protocols, and these will be further examined under the Material Culture section. Overall, the emphasis on improving health education supported the education hypothesis of this study by recognizing that doctors may not have time to educate patients in a clinical settings, thus UNHCR is training other members of the healthcare system to educate diabetes patients and improve disease management.

Interviews with healthcare practitioners covered the sectors of NGO care and MoH care. The MoH clinics can be divided into two sub-sections, as one is a very specialized clinic that has not treated any Syrians, where the other is a large, comprehensive health center that treats a significant amount of Syrians every day. The specialized clinic may be more closely likened to a private clinic, as it takes money and several referrals to be treated at this clinic. The practitioner at the specialty clinic (Interview D) stated that around 30-35% of her patients controlled their diabetes, as it is difficult to reduce their weight, and she follows the ADA guidelines when treating her patients; however, when asked about psychosocial support, she said these issues were a very low priority. This is puzzling as the ADA guidelines cite psychosocial issues as an important thing to consider when treating diabetic patients. This confirms the portion of the hypothesis that predicts diabetes and mental illness will be seen as separate issues.

Two separate interviews were conducted at the MoH comprehensive health center. Interview A is a primary care physician, while Interview C is the diabetes specialist at the clinic. Both physicians cited the importance of education as a means of improving compliance with recommendations, and they also referred to a crowded clinic with a long waiting time as the main reason education was difficult to give in a clinical setting. Interview A stated that Syrian refugees "do not take their drugs properly, and we cannot figure out why", emphasizing the need to educate the patients so they see the need to take their medicine in order to prevent severe complications. Interview C strongly believed that family members and the internet were popular routes of patient's educating themselves about their condition. He also mentioned the importance of the doctor "talking on the level of a patient" when educating about diabetes. These two interviews strongly supported the education hypothesis with regards to lack of time in a clinical setting and low education levels. The specialist expanded this hypothesis in ways by discussing the importance of other methods of education.

There was a large gap in the way the two physicians saw psychosocial issues among Syrian refugee women in relation to diabetes. The primary care physician opposed the mental health hypothesis by illustrating a belief that mental stress and diabetes are intertwined, going so far as to say that stress could be a main cause in the elevation of their blood sugar. She also declared that she was more likely to screen Syrian refugees for mental illness early in the treatment process due to the situation. (Interview A) The specialist supported the hypothesis slightly by

acknowledging psychosocial issues as a secondary or tertiary problem, instead of a common comorbidity. (Interview C)

The NGO practitioner (Interview G) supported the education hypothesis by stating that there is not much time to educate in the clinical setting. She explained that education is difficult because the refugees "do not understand," and there is often not much time during clinic to explain the disease at the level they need. In order to combat this, her clinic offers monthly health education lectures where Syrians are individually invited and receive small gifts for attending. Physicians and nutritionists give lectures that focus on healthy eating and general information relating to NCDs. She did not support the mental health hypothesis as she saw mental illness and diabetes as common comorbidities, and she often refers refugees to the NGO psychologist due to the large amount of stress they are under. (Interview G)

The last interview, with a father and daughter diagnosed with Type I diabetes, served to bolster the prediction that many refugees are not highly educated about their disease. The family lived in very rough conditions—10 people in one room above several loud, fume-ridden auto mechanic shops. When asked about their treatment regimen, it was discovered that the five diabetic family members all share one insulin pump, which the father receives by visiting an NGO clinic "for the family" once a month. Two girls, who see a doctor once or twice a year, were suffering severely from the lack of proper care. One girl lost so much of her eyesight she had to drop out of school, and the younger girl was beginning to

lose her hearing. (Interview F) It is clear by the severe complications that the family has not received proper education about their disease.

Overall, the interviews of various actors in the health system generally supported the hypothesis that health education is needed among diabetics and that short consultation times make it difficult to educate patients in a clinical setting. Some interviewees emphasized education plans that take this into account by utilizing other resources (health workers, internet, family members) as means of educating patients. This effectively takes the crisis situation into account. Interviewees' responses to questions regarding the mental illness hypothesis were varied. A little more than half saw mental illness and diabetes as comorbidities, while others saw them as separate issues.

Surveys

While the surveys were by no means able to provide a conclusive picture, the results gave insight with regards to the treatment hypothesis and the general profile of Syrian refugee women with diabetes. Below, **Figure 4** outlines some results found by the questionnaires.

Total respondents:	8
Age	Average: 57 Range: 45-68
Average BMI	33.6 (>30=obese)
Marital status	6 married, 2 widowed
Most common health issues other than diabetes	Hypertension, Dyslipidemia (cholesterol)
Cooking and whether they cook healthier foods due to diabetes	All respondents cook for their household, but only 50% stated that they cook healthier foods because of their diabetes
Education	6/8 did not complete high school 2/8 completed high school
Access to necessary medicine	50% stated that they had not been able to access necessary medicine in the last 6 months
Clinic visits	7/8 visit a clinic once a month for diabetes 1/8 visits a clinic every 4 months or more Only 50% of respondents see the same doctor regularly
Educated by pharmacist about their diabetes medicine	2/8 receive information from their pharmacist about their medicine 6/8 do not receive information from their pharmacist about their medicine
Does the doctor ask about your general wellbeing?	8/8 yes
Does the doctor ask if you are satisfied with life or if you are sleeping well?	1/8 yes 7/8 no
Does your doctor ask if you cry a lot or feel hopeless?	8/8 no

Figure 4: General results from surveys distributed to diabetic, Syrian refugee women during a clinic visit

Particularly concerning among these results are the fact that half of the respondents did not change their diet. As posited previously, this could be from lack of access to healthy foods or the women do not decide what they cook. In fact, Interview E pointed out that, in her experience, the woman does not make the meal decisions for the household. Another concerning result was that half of the patients reported not having access to essential medicines in the past six months.

Pertaining to the treatment hypothesis, the general wellbeing portion was completely disproved by the results. Every respondent indicated that the doctor inquired about her general wellbeing. When questioned about depressive symptoms, all but one respondent indicated that the doctor does not ask questions that probe for common depressive symptoms. This fact fully supports that portion of the treatment hypothesis, and it is concerning that these questions are not asked among a population that is high at risk for depression and other psychosocial illnesses. While all surveys took place at the same clinic, it is important to note that only half of the respondents see the same doctor every time, thus the results are still applicable to this study.

Overall, the survey results effectively supported and disproved portions of the treatment hypothesis. The lack of cursory screening for mental health issues among diabetic patients may indicate a poor understanding of the strong link between mental illness and diabetes.

Material Culture

The material culture examined consisted of PCE International's "Trainer's Toolkit" for a course in NCDs and the diabetes treatment field guide. Both documents will soon be implemented across Jordan in hopes of improving NCD treatment. The Toolkit's main objective is to "give participants the knowledge and skills necessary to improve their ability to prevent, detect and manage patients with the most important Non Communicable Diseases (NCDs)." (2015, p. 7) The session on diabetes is thorough, even outlining proper management of diabetes during the month of Ramadan. Although it does instruct physicians on the best way to explain diabetes and its treatment to the patient, it does not advocate for mental health screenings of diabetic patients. This supports the mental health hypothesis of this study; however, it does mention "social or psychological problems" when instructing physicians on caring for patients with multiple problems. (2015 p. 19) It is puzzling that a three-minute neurological exam is taught and not a general mental health screening. While it is important that the patient is not physically impaired by brain damage, it is just as important for mental illnesses to be recognized, especially in a population that is under as much stress as refugees. Additionally, the course attempts to improve consultation skills, especially pertaining to changing behavior in patients. This will help physicians form a closer relationship with their patients that allows for more effective education. In sum, the Trainer's Toolkit teaches many key skills and encourages improved treatment of NCDs and mental illness; however, it is disappointing that it does not outline the direct correlation between diabetes and mental illness.

The diabetes field guide concisely outlines the treatment protocol for diabetes in Jordan including medicines that are more widely available. By not including mental illness or a psychological screening in the four aspects of diabetes management, it strongly confirms this study's prediction that diabetes and mental illness will not be seen as common comorbidities, although the literature says differently. While the UNHCR should be applauded for distributing standard treatment protocols and providing NCD training to Jordan's physicians, it is disappointing that mental health is not considered as a major topic in either of the documents.

V. Conclusions

Through an in-depth literature review and methodology focused on the content, context, processes and actors of the health system, this study investigated the integration of improved health literacy and mental health treatment in diabetes care among Syrian refugee women. The hypothesis for this study can be broken down into three categories: treatment, education, and mental health. With regards to the treatment hypothesis, it was predicted that doctors would not ask questions about general wellbeing or probe for depression symptoms during consultation. While it was proven that doctors often do ask about general wellbeing, the results showed that the patient was rarely, if ever, asked if she was experiencing any common symptoms of depression. This study shows the increased need for psychological stress to be addressed at the primary level in refugee care in Jordan.

In the matter of education, the overall results supported the prediction that

patient knowledge about diabetes is low and that doctors are limited in the amount of education they can provide by short consultation times. Interviews discovered the plans for expanding traditional health education through the involvement of other healthcare workers, some focused on solely education of patients. This was unexpected, and it bodes well for the future of health literacy among refugees and citizens in Jordan.

Pertaining to the mental health hypothesis, the results supported the hypothesis by highlighting a belief that diabetes and mental illness are separate issues, when they were strongly supported by the literature as common comorbidities that should be considered together by the physician. This may lend itself to a broader compartmentalization of mental health care in Jordan. Two interviews stated that mental health treatment is largely undertaken by NGOs. Until a vertical mental health referral system can be established in Jordan, mental illnesses may continue to be perceived as separate issues.

While this study was not a large, quantitative study, the qualitative perspective gave a sufficient overview of the continual process of integrating education and mental health care into the treatment of diabetes in Syrian refugee women.

VI. Study Limitations and Recommendations for Further Studies

As aforementioned, this study was limited mainly by time and patient access. Thus, the recommendations for further studies are largely based on expanding the

number of interviews and surveys distributed. Eight patients is by no means a conclusive number, and the study would be much more impactful if it had a large number of patients. While the patients can be difficult to access and distribute surveys to, it is important that their voices be heard, thus it is recommended that future studies continue to focus on women. Additionally, this study was most likely biased by the narrow investigation of clinics. It is recommended that further studies expand their reach both geographically within Jordan and through different types of NGO/MoH clinics in order to discover a more holistic understanding the issues. A future investigation should also attempt to investigate diabetes treatment through refugee communities instead of clinics, if possible. This study was limited due to the fact that the surveys took place in clinics, where the respondents could have felt pressure to respond certain ways, even though they were properly informed of confidentiality. Lastly, an investigation into the reasons the UNHCR opted to largely ignore mental health in their treatment protocols and training is necessary.

VII. List of Resources

Primary Resources:

8 Questionnaires distributed to diabetic, Syrian refugee women: 3rd & 8th of December 2015
Interview A with primary care doctor at MoH center: 26 November 2015
Interview B with senior MoH official: 24 November 2015
Interview C with diabetes specialist at MoH center: 26 November 2015
Interview D with endocrinologist at University Hospital: 29 November 2015
Interview E with senior UNHCR official: 3 December 2015
Interview F with family with high burden of diabetes: 7 December 2015
Interview G with NGO doctor: 10 December 2015
Material culture collected from UNHCR official: 9 December 2015

Secondary Resources:

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Appendix A

Questionnaire for Syrian female refugees
Location: Caritas Clinic

Questionnaire introduction:

Marhaba, my name is Miller Richmond and I am a third-year student at the University of Mississippi in the United States. I am majoring in International Studies with an emphasis in Global Health. In Jordan, I am studying with the School of International Training based in Amman. This month, I am completing an independent research project looking at diabetic patients, their overall happiness, and the satisfaction they have with their course treatment. I would like to thank you for taking your time to talk to me.

The purpose of this study is to give your healthcare provider the tools they need to treat people with chronic diseases, like diabetes, who have been through high stress and traumatic events. I will not collect your name or any identifying information, and all answers are confidential. Additionally, if you have any questions for me during the survey I will be available in the clinic, and you may contact me after your visit at marichmo@go.olemiss.edu with any questions or concerns about the study. Thank you so much for your time, and I hope you have a good visit to the clinic today.

Sincerely,
Miller

Questions

1. What is your age? _____
2. Height _____
3. Weight _____
4. What is your marital status?
   - ☐ Widowed
   - ☐ Married
   - ☐ Single

5. What health issues do you have?
   - ☐ Diabetes
   - ☐ Hypertension
   - ☐ Other (please specify) _____
6. How long have you been in Jordan?
   - ☐ 3 months or less
   - ☐ 4-11 months
   - ☐ 1-2 years
   - ☐ More than two years

7. How many, if any, children do you have living with you?
   - ☐ 0
   - ☐ 1-2
   - ☐ 3-4
   - ☐5-6
   - ☐ 7 or more
8. How many total people are in your household?
   - ☐ 0
   - ☐ 1-2
   - ☐ 3-4
   - ☐5-6
   - ☐ 7 or more

9. Do you cook for your household?
   - ☐No
   - ☐Yes

     If so, do you cook healthier foods because of diabetes?

10. What is the highest education you have completed?
    - ☐ Did not attend formal education
    - ☐ Less than high school
    - ☐ Completed high school
    - ☐ Baccalaureus
    - ☐ Graduate Studies
11. What is your household's total approximate monthly income?
    - ☐ Less than 400 JD
    - ☐ 400- 800 JD
    - ☐ 800 JD or more
12. Where does the majority of this come from?
    - ☐ Job
    - ☐ Jordanian government
    - ☐ NGO
    - ☐ Family
13. Do you have medical insurance?
    - ☐ Yes
    - ☐ No

    If so, what is the name of it? _____
14. How long have you had diabetes?
    - ☐ Less than 6 months
    - ☐ 7-11 months
    - ☐ 1-2 years
    - ☐ More than 2 years
15. Do you feel that your diabetes is under control?
    - ☐ Yes
    - ☐ No
16. Have you been unable to access medicine in the past 6 months?
    - ☐ Yes
    - ☐ No
17. Have you been to the emergency room in the past 6 months?
    - ☐ Yes
    - ☐ No

If so, why? _____

18. What medication are you on for diabetes? _____
19. Are you on any other medications? _____
20. How often do you visit a clinic to receive diabetes care?
    - ☐ More than once a month
    - ☐ Once a month
    - ☐ Once every 1-3 months
    - ☐ Once every 4 months or more
21. Do you visit the same clinic every time?
    - ☐ Yes
    - ☐ No
22. Do you see the same doctor every time?
    - ☐ Yes
    - ☐ No
23. How long does the doctor stay in the room?
    - ☐ Less than 5 minutes
    - ☐ More than 5 minutes
24. How satisfied are you regarding the care from your doctor?
    - ☐ Extremely satisfied
    - ☐ Somewhat satisfied
    - ☐ Somewhat unsatisfied
    - ☐ Unsatisfied
25. Do you go to the same pharmacy to get your medicine every time?
    - ☐ Yes
    - ☐ No
26. Does the pharmacist explain your medications to you in detail?
    - ☐ Yes
    - ☐ No
27. How satisfied are you regarding the care from your pharmacist?
    - ☐ Extremely satisfied
    - ☐ Somewhat satisfied
    - ☐ Somewhat unsatisfied
    - ☐ Unsatisfied
28. Does the doctor ask about your general wellbeing?
    - ☐ Yes
    - ☐ No
29. Does your doctor ask if you are satisfied with life or if you are sleeping well?
    - ☐ Yes
    - ☐ No
30. Does your doctor ask if you cry a lot or feel hopeless?
    - ☐ Yes
    - ☐ No
31. Does your doctor ask you if you are eating healthy?
    - ☐ Yes
    - ☐ No
32. Does your doctor ask you if you have the resources you need to both manage your condition and be happy? For example, money, healthy foods, glucose monitors, a decent house, a happy family.
    - ☐ Yes
    - ☐ No

33. Has your doctor ever recommended you seek support from family members or friends to make you happier?

☐ Yes
☐ No

34. Has your doctor ever recommended you seek support from a medical professional to make you happier?

☐ Yes
☐ No

35. Is there anything you would like to ask me or anything that you think I should know?

Appendix B

نموذج موافقة على المشاركة في بحث

هدف البحـــــث:

الهدف من هذه الدراسة هوالتحقيق في علاج مرض السكري في اللاجئات السورية. نأمل أن نتائج هذه الدراسة .

تساهم في خطة أفضل علاج مرض السكري للمريض

يعتبر هذا البحث احدى متطلبات مؤسسة التعلم الامريكية في الأردن: دراسات عامه حول الصحة وتنمية المجتمع.

نتائج هذا البحث ستكون متوفرة على شبكة التواصل العنكبوتية (الانترنت), و من الممكن أن تستخدم هذه النتائج

.في المستقبل لأغراض بحثية أخرى

الخصوصيه والسريه:

كل المعلومات التي سيتم جمعها ستعامل بسرية تامة من قبل الباحثه ولن يطلع على البيانات إلاّ الباحثه نفسها.

بالاضافه الى ذلك سيتم اتلاف البيانات فور الانتهاء من الدراسه وتحليل النتائج.

حقوق المشاركين:

المشاركة في البحث طوعية وبمحض اختيارك.لا يتطلب الاشتراك في البحث ذكر الاسم او ما يدل عليه ومهما كانت

اجابتك او رأيك فان هذه الاجابات والآراء لن تؤثر بأي شكل كان على وضعك. كما انه لديك الحق بعدم المشاركة في

البحث ان شئت، واذا ما غيرت رأيك وقررت الانسحاب بعد المشاركة فيمكنك الانسحاب كذلك. ومن حقك رفض السماح للباحثه باستخدام بيانات الدراسه في اي دراسات أخرى ستقوم بها الباحثه الرئيسيه.

المعايير الاخلاقيه لمؤسسة التعلم الامريكية:

أ. الخصوصية - كل المعلومات سيتم تسجيلها وحمايتها كما ستعامل بسرية تامه, من حقك رفض تسجيل المقابله وذلك من خلال الباحث الرئيسي.

ب. عدم الكشف عن الهوية - لا يتطلب الاشتراك في البحث ذكر الاسم او ما يدل عليه إلا إذا اختار المشارك خلاف ذلك.

ج. السرية - إن جميع الأسماء ستبقى سرية تماما ومحمية بالكامل من قبل الباحثه.

من خلال التوقيع أدناه، فإنك تعطي الباحثه المسؤولية الكاملة لحفظ هذا العقد ومحتوياته. كما سيتم توقيع نسخة من هذا العقد واعطائها للمشارك.

5. اقرار موافقه:

من خلال التوقيع أدناه، فإنك توافق على استخدام ردودك على أسئلة الاستطلاع في دراسة بحثية بعنوان (----------

--------). كما أن توقيعك يعني أنك لا تمانع باستخدام ردودك على أسئلة الاستطلاع خلال هذه الدراسة في دراسات مستقبلية على مواضيع مماثلة . وعلاوة على ذلك ، توقيعك يعني فهمك الكامل لحقوقك أثناء المشاركة في هذه الدراسة.

----نعم لا---- اوافق على تسجيل المقابلة علما بان المقابله سيتم اتلافها خلال شهر عند الانتهاء من تحليل المعلومات.

توقيع المشـــــــــارك_____ التاريخ:_____-------
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6. اقرار سريه:
من خلال التوقيع أدناه فانك ملتزم بحفظ المعلومات المقدمة من قبل المشاركين في الدراسة بسرية في جميع الأحوال. وهذا يشمل هوياتهم، اجوبتهم على الأسئلة، أو أي معلومات أخرى.
توقيع الباحثة_____التاريخ:_____

توقيع االمترجمه_____

التاريخ_____

Appendix C

Due to the files being incompatible with Microsoft World, all material culture will be included in a separate file.